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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,863	11/03/2003	Paul J. Marganski	ATMI-669	5129

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INTELLECTUAL PROPERTY / TECHNOLOGY LAW
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EXAMINER	
GORDON, BRIAN R	

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,863	MARGANSKI ET AL.	
	Examiner	Art Unit	
	Brian R. Gordon	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 1-6-06.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-2, 5-6, 8-10, 13-21, 24-25, 27-29, 31-36 is/are rejected.

7)☒ Claim(s) 3,4,7,11,12,22,23,26 and 30 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed June 27, 2006, with respect to the rejection(s) of the claim(s) under 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kondo et al. 5,108,803.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6, 10, 13-15, 19-20, 25, 29, 31-33 rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al.

Kondo et al. disclose a thermally shrinkable film having a liquid detecting function comprising one side of the thermally shrinkable film with an ink coated thereon or with a design or pattern printed thereon by ink; the ink turning its color or which dissolves and flows away upon contact with a liquid leaking from the item or object or entered into the thermally shrinked film.

The ink to be used for the invention may be any one which turns color or becomes discolored upon contact with a liquid such as water, a liquid containing sugar or salt, or an acidic or alkaline solution.

The thermally shrinkable film according to the present invention may include, for example, a mono-layer film consisting of a vinyl chloride resin, a polypropylene resin or the like, or a multi-layer film having various characteristics such as a resinous layer having a gas barrier laminate as a middle layer.

A thermally shrinkable film and the like of polypropylene type or of polyethylene type may be employed.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 5-6, 10, 14-20, 24-25, 29, 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. in view of Kondo et al.

Puri et al. disclose an apparatus for detecting a leak of a fluid from a vessel having an inner wall and an outer wall includes at least one chemical material layer adjacent the outer wall. At least a portion of the chemical material layer is adapted to undergo a chemical reaction with a portion of the fluid leaking through the outer wall. The apparatus may also include at least one semi-permeable material layer adjacent the chemical material layer. The fluid may be a pressurized gas, such as hydrogen or another gas that will react with the chemical material layer to produce a detectable odor and/or a detectable discoloration of the chemical material layer.

The chemical material layer contains at least one chemical material which, upon reaction with the leaking fluid, generates an odor and/or changes color. The chemical

materials may also be encapsulated between an appropriate semi-permeable material layer (getter) and the walls of the fluid (gas) storage vessels and piping.

The thin encapsulating layer is formed on the odorant film, for example, using a rubbery polymer such as polydimethyl siloxane amongst other rubbery materials and glassy polymers, such as polyimides, polysulfones, polyamides, polyarylates, polyolefins, polycarbontes, and the like.

The chemical material in Example 1 is mixed with an appropriate polymer solution to make a coating solution capable of forming a film on the surface of the vessel. A 0.01-10% w/w solution of the polymer in an appropriate organic solvent is made and the solution from Example 1 is added to it in sufficient quantity. A single layer or multi-layer coating of this material is applied to the outer walls of the fluid vessel.

Persons skilled in the art will recognize that one or more additional semi-permeable materials or permeable material layers could be placed in between the vessel wall and the chemical material layer and/or in between the chemical material layer and the semi-permeable material layer employed in the present invention, as described in the embodiments above. Such arrangements would still function in accordance with the present invention as long as the additional semi-permeable or permeable materials are permeable to the stored gas (fluid) and/or to at least a portion of the chemical material from the chemical material layer. The additional semi-permeable or permeable material in such an arrangement could be in any of the following forms: solid, liquid, gaseous, or multi-phase.

Puri et al. does not specify the film is shrink wrapped on the device.

However Kondo et al. discloses a shrink wrapped device as given above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the device of Puri et al. may be shrink-wrapped to detect a leak.

6. Claims 1, 5-6, 10, 15-20, 25, 29, 31, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore, US 5,447,688 in view of view of Kondo et al.

Moore discloses a detector, which is source specific, for detecting a fugitive emission from a component containing a gaseous or volatile analyte, and is adaptable for adjacent disposition to the component. The device includes (a) a substrate for disposition adjacent the component from or through which the analyte is emitted, said substrate being substantially inert to the analyte, (b) an analyte-reactive reagent, and optionally (c) an indicator. When the detector is applied adjacent the component, a detectable reaction occurs (e.g., color-forming reaction or signal) with the analyte emitted.

In a large number of processing industries, gaseous or volatile materials, especially volatile organic compounds, are transported along or through a system or network having incorporated therein varied components including, for example, pipe lines, valves, fittings (including flanges, seals, and threaded connections), pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, meters, and the like (vessels). These industries include most notably the hydrocarbon processing industries such as petroleum refineries, chemical and petrochemical plants, oil and gas production gas facilities, natural gas processing facilities, and pipeline transfer stations, but might also include other industries or facilities such as the pharmaceutical industry,

wood products industry, the ceramic industry, and the like. Any of these components interconnect Suitable substrate materials include natural and synthetic materials, such as cellulose (e.g., wood cellulose, cotton, and rayon), polyolefins (e.g., polyethylene, and polypropylene), nylon, synthetic papers, glass fibers, glass beads, fritted glass, based etched glass plate or beads, silica gel, fused silica, carbon, ceramic-type materials such as alumina and silica, molecular sieves, zeolites, and the like. The substrate should avoid interfering substances. The substrate material may be applied as a thin coating on an inert carrier or support which preferably is transparent such as polyethylene or Mylar tape or film. (Mylar is a Dupont trademark for a polymer of polyethylene terephthalate.) The substrate is of a suitable material capable of holding or containing or sorbing the reagent, such as being provided with a surface coating or impregnated coating of the reagent, which may be accomplished as by spraying, dipping, brushing, spreading, printing, etc throughout the plant or facility are susceptible to leaks especially at a joint or juncture due to such factors as defects in the equipment or in the connecting parts, temperature variations causing an expansion and contraction of the component especially at a joint, corrosion, or mishandling by a worker. Many or most of these gaseous or volatile organic compounds utilized or produced in these industries can be potentially toxic or hazardous, and therefore it is essential to maintain a tight system so as to avoid or minimize any leaks. For example, in order to provide a tight connection at a joint or juncture, three classes of joints are in conventional use: viz., welded joints, flanged joints, and a stuffing box as at meter and valve joints. A leak

at a juncture can develop at anytime with all three classes, but the latter two are more probable to be troublesome.

It should be understood that the substrate, per se, which is an essential member of the analytical device or detector (colorimetric member), can be, but need not be in direct or actual contact with the component or some portion thereof.

The substrate may comprise papers, fabrics, foil, or films, which can be cellulosic, metallic, or synthetic, including nonwovens such as meltblown or spunbonded polyolefins, or organic polymers or copolymers such as polyethylene or nylon, or a combination thereof.

A particularly useful exterior overlay comprises an adhesive element or member, such as a plastic tape which is transparent to the color signal. The substrate is affixed to the tacky surface of the adhesive element and within its boundary so as to provide an overlap of the tacky surface for adherence to the component or to the encapsulating means, if desired, and in this manner, the substrate is thereby maintained in position and protected from contamination. Alternatively, both surfaces of the exterior overlay can be tacky, so that the substrate can be affixed to one surface and the whole structure be contained within the interior of the capsule, such as affixing the structure to the interior wall of the capsule, or the structure be bonded to the exterior surface over a hole in the wall of the capsule. As shown in table 1, polyvinyl chloride is an element of the film.

Moore et al. do not disclose the specific composition of the film material.

However Kondo et al. discloses a shrink wrapped device as given above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the device of Moore et al. may be shrink-wrapped to detect a leak.

7. Claims 1, 6, 10, 15-20, 25, 29, 31, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallow et al., US 5,322,797 in view of view of Kondo et al.

Mallow et al. disclose the detection of the presence of certain vapors or liquid reactants, such as ammonia or amino compounds, is quite important, particularly when the presence of such vapors or liquid reactants indicates the presence of toxic chemicals or biological warfare agents, or the undesirable leakage of a gas from an enclosure (vessel). A number of prior apparatus and methods for detecting vapors and liquid reactants are known in the art. Nevertheless, the art does not teach or suggest a sprayable, brushable, or trowelable paint which incorporates in its dried film (colorimetric member) the combined properties of vapor permeable, liquid repellant film and an accessible indicator which can detect extremely low concentrations of reactant, such as ammonia, and regenerate the original color. More particularly, prior art does not teach the extraordinary contribution of amorphous silica as intensifier of sensitivity.

The composition of the present invention may be utilized for detecting chemical or biological warfare agents and for monitoring respiratory gases. In either application, the composition of the present invention is applied to an object and the color change of the composition is thereafter sensed, either visually or with appropriate instrumentation. The degree of color change may also be measured. The composition of the present invention may also be utilized for detecting leakage from an enclosure by introducing a

predetermined gas to the enclosure, applying the composition of the present invention to the exterior of the enclosure or an object adjacent to the exterior of such enclosure, and sensing the color change in the composition, either visually or with appropriate instrumentation. The degree of color change of the composition may also be measured.

Mallow et al. do not disclose the specific composition of the film material.

However Kondo et al. discloses a shrink wrapped device as given above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the device of Mallow et al. may be shrink-wrapped to detect a leak.

8. Claims 1, 6, 8, 10, 15-20, 25, 27 29, 31, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matthiessen US 4,106,428 in view of Kondo et al.

Matthiessen discloses an improved shield for a pipe joint (vessel) is described that includes an elongated body to be wrapped around a pipe coupling, formed from a strip of pliable fabric. One or more fabric liner strips are disposed within the body, and means are provided for separably connecting its ends together. The liner strips are loosely slidable relative to the body during wrapping of the assembly of the body and liner strips around the pipe coupling (valve). One or more display means for monitoring the coupling integrity are held against the fabric body in assembled relation by a clear envelope means. The display means (colorimetric member) is formed from a sheet of chemically sensitive material having an indicating means thereon which, upon contact with leakage from the pipe coupling, provides a visual indication of such leakage.

To overcome the problems of the prior art, the present invention provides an improved shield for a pipe coupling capable of utilizing the most advanced developments in the field of plastic technology as well as providing display means for monitoring pipe coupling integrity. The shield has an elongated one-piece pliable plastic fabric body of a length and width dimensioned to be wrapped around a pipe coupling with its ends overlapped and having separate connection means for connecting said ends together. A pliable fabric liner strip is confined wholly within and extends centrally along said body. Retaining means are provided for holding the liner strip against unintended displacement. At least one display means is provided for monitoring pipe coupling integrity, the display means formed from a sheet of chemically sensitive material subject to color change. A clear envelope means is disposed over the display means to hold the display means and fabric body in assembled relation to the side of the shield body opposite the attachment of the liner strip so that a visual indication of pipe coupling integrity is provided by the display means. The type of fabric used for the outer cover and the reinforcing core is porous, so that any leaking material can penetrate slowly through the layers of fabric and make contact with the chemically sensitive material used as the display means so that color changes show the presence of leaking material.

Matthiessen does not disclose the specific composition of the chemically sensitive material.

However Kondo et al. discloses a shrink wrapped device as given above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the device of Matthiessen et al. may be shrink-wrapped to detect a leak.

As to claims 8 and 27, organometallic compounds are well-known to be employed in the field of semiconductors, it would have been obvious to on of ordinary skill in the art at the time of the invention to recognize the device of Matthiessen may be employed to dispense such a compound.

9. Claims 2 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. as applied to claims 1 and 19 above, and further in view of Wells et. al. US 4,958,895.

Kondo et al. do not disclose the film is comprised of poly(vinylpyridine).

Wells et al. disclose a polymer film, examples of suitable polymeric materials for such film being polyvinylalcohol and polymethylmethacrylate. Polyvinylalcohol is particularly suitable because it is water-soluble, this and the fact that polyvinylpyridine films are water-insoluble facilitating ease of production.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the polymeric films of Kondo et. al. may be comprised of polyvinylpyridine for it easily produced.

10. Claims 9 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. as applied to claims 1 and 19 above, and further in view of DeGuire et. al. US 5,352,517.

Kondo et al. do not disclose the film is comprised of iron oxide.

DeGuire et al. disclose the synthesis of metal oxide films (iron oxide) and, more particularly, to a process for synthesizing metal oxide films from liquid solutions on to ordered organic monolayers. The resulting metal oxide film has a highly uniform packing density and particle size.

The film materials have a wide variety of applications, including: thin film ferroelectrics; magnetic recording; multilayer coatings for lenses, windows, and laser optics; hard, corrosion-resistant coatings for optical fibers; filters for electromagnetic radiation; acousto-optic devices; and electrochemical sensors for detection of combustible or hazardous species in gases.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the polymeric films of Kondo et al. may be comprised or iron oxide in order to detect hazardous gases.

Allowable Subject Matter

11. Claims 3-4, 7, 11-12, 22-23, 26, 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach nor fairly suggest a fluid storage and dispensing device contains tris(trifluoromethyl)stibine, said film comprises polyvinylalcohol film having copper sulfate incorporated therein, and the film contains copper sulfate or copper hydroxide.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heinzen, Ralph; Friedman, Simon; Flosbach; Rudolf; Tomson; Louis R.; Greenwood; Rick et al.; White; Robert W. et al.; Keyser; Robert O.; Mueller; Walter B.; Herran; Vincent W. et al.; Anderson; Bruce E.; Nugent; Edward L.; and Call; Richard E. disclose leak detection devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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